POSTER 21

Phytochemical profile, antioxidant activity and cytotoxicity against keratinocytes, fibroblasts and endothelial cells of picoplanktonic marine cyanobacteria

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Combining the increase demand for natural products in skin care formulations, and the bioactive arsenal of cyanobacteria, we aimed with this study to evaluate the potential of a 70% ethanolic extract of picocyanobacteria strains of the genera *Cyanobium* and *Synechocystis* for skin care applications. The cyanobacteria extract was analyzed for the phytochemical profile including carotenoid and phenolic content, for the antioxidant potential, and for the *in vitro* cytotoxicity against keratinocytes (HaCat), fibroblasts (3T3L1) and endothelial cells (hCMEC/D3). The total carotenoid content ranged from 162.43 to 383.89 μg g^{-1} of dry biomass and the total phenolic content (TPC) from 1.09 to 2.45 mg GAE g^{-1}. Identified carotenoids consisted in zeaxanthin, lutein, canthaxanthin, echinenone and β-carotene, being zeaxanthin and lutein the most representative (49.82 and 79.08 μg g^{-1}, respectively). The antioxidant potential assessed by the DPPH• and superoxide anion radical ($O_2^{\bullet-}$) scavenging assays resulted in an IC_{50} of 863.82 μg mL^{-1} and 1275.86 μg mL^{-1} respectively. An increase in cell viability was registered, particularly for fibroblasts and keratinocytes. From all the strains, both the species *Synechocystis salina* LEGE06099 and *Synechocystis salina* LEGE06155 evidenced an interesting potential for further exploitation.

Keywords: cyanobacteria, phytochemicals, antioxidant potential, cytotoxicity

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